12BY7-A

Sharp-Cutoff Pentode

9-PIN MINIATURE TYPE

For Equipment Having Series Heater-String Arrangement

GENERAL DATA

Electrical: ←

Heater, for Unipotential Cathode:

	Series	*Parallel*	
Heater arrangement	*Series*	*Parallel*	
Voltage (AC or DC)	12.6 ± 10%	6.3	volts
Current	0.3	0.6 ± 6%	amp
Warm-up time (Average)	–	11	sec

Direct Interelectrode Capacitances:[a]

Grid No.1 to plate	0.063	$\mu\mu$f
Grid No.1 to cathode, grid No.3 & internal shield, grid No.2, and heater	10.2	$\mu\mu$f
Plate to cathode, grid No.3 & internal shield, grid No.2, and heater	3.5	$\mu\mu$f

Characteristics, Class A_1 Amplifier: ←

Plate Supply Voltage	250	volts
Grid No.3	*Connected to cathode at socket*	
Grid-No.2 Supply Voltage	180	volts
Cathode Resistor	100	ohms
Plate Resistance (Approx.)	93000	ohms
Transconductance	11000	μmhos
Plate Current	26	ma
Grid-No.2 Current	5.75	ma
Grid-No.1 Voltage (Approx.) for plate μa = 20	-11.6	volts

Mechanical:

Operating Position	Any
Maximum Overall Length	2-5/8"
Maximum Seated Length	2-3/8"
Length, Base Seat to Bulb Top (Excluding tip)	2" ± 3/32"
Diameter	0.750" to 0.875" ←
Dimensional Outline	See *General Section*
Bulb	T6-1/2
Base	Small-Button Noval 9-Pin (JEDEC No.E9-1)
Basing Designation for BOTTOM VIEW	9BF

Pin 1 - Cathode
Pin 2 - Grid No.1
Pin 3 - Grid No.3, Internal Shield
Pin 4 - Heater
Pin 5 - Heater
Pin 6 - Heater Tap
Pin 7 - Plate
Pin 8 - Grid No.2
Pin 9 - Grid No.3, Internal Shield

← Indicates a change.

→ **AMPLIFIER — Class A_1**

Maximum Ratings, *Design-Maximum Values:*

PLATE VOLTAGE	330	max.	volts
GRID No.3 (SUPPRESSOR GRID)	*Connect to cathode at socket*		
GRID-No.2 (SCREEN-GRID) VOLTAGE	190	max.	volts
GRID-No.1 (CONTROL-GRID) VOLTAGE:			
Negative-bias value	55	max.	volts
Positive-bias value	0	max.	volts
GRID-No.2 INPUT	1.2	max.	watts
PLATE DISSIPATION	6.5	max.	watts
PEAK HEATER-CATHODE VOLTAGE:			
Heater negative with respect to cathode	200	max.	volts
Heater positive with respect to cathode	200[b]	max.	volts

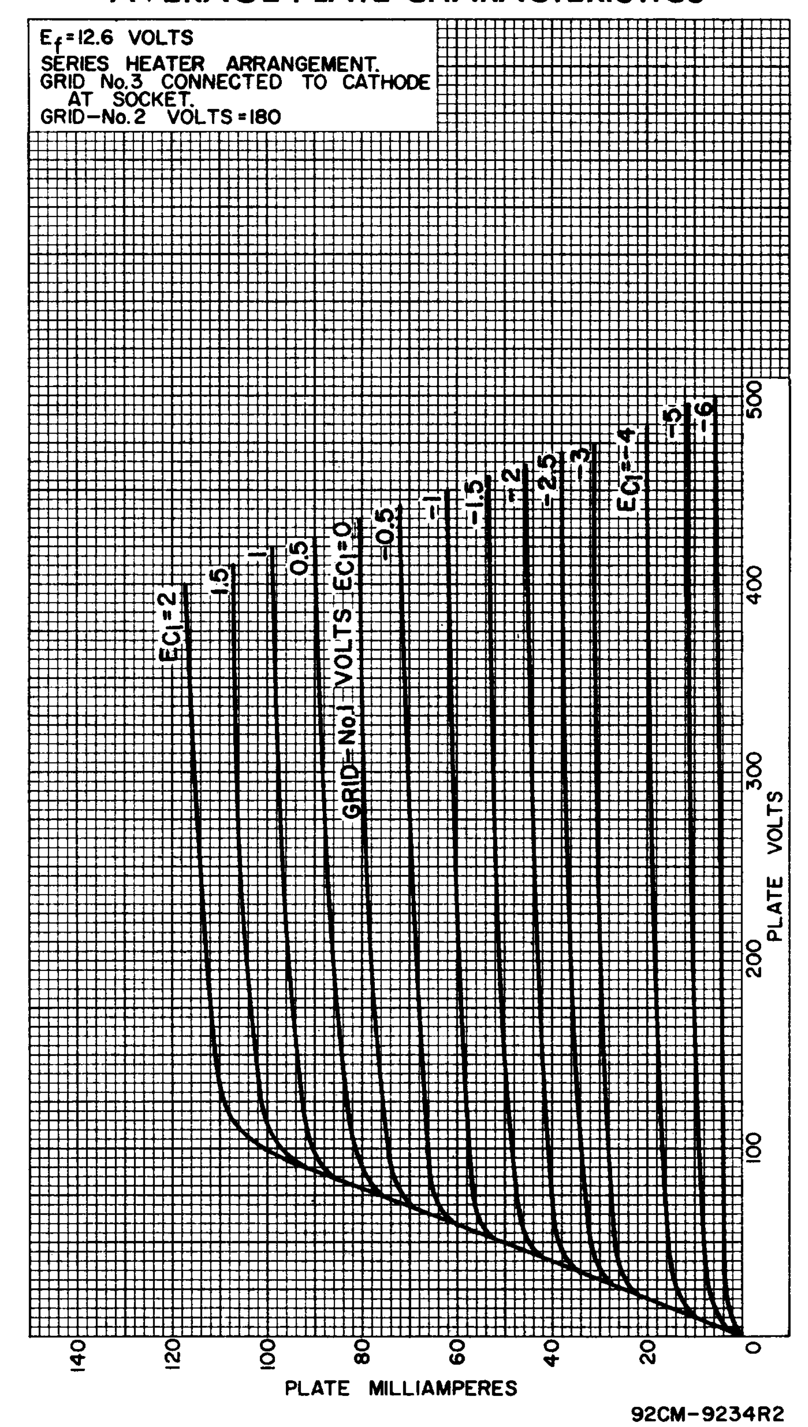
Maximum Circuit Values:

Grid-No.1-Circuit Resistance:			
For fixed-bias operation	0.25	max.	megohm
For cathode-bias operation	1	max.	megohm

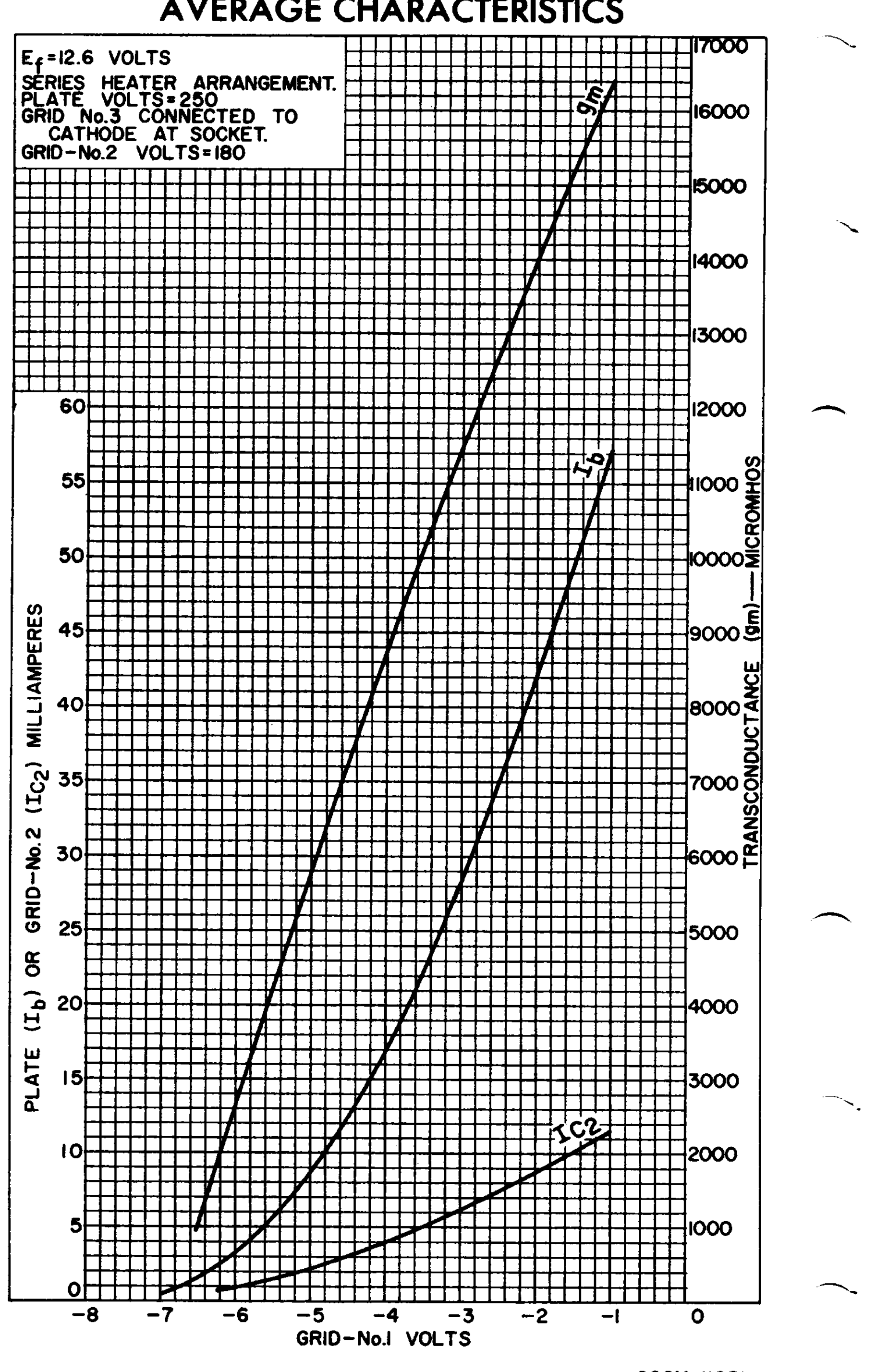
[a] Without external shield.
[b] The dc component must not exceed 100 volts.

→ Indicates a change.

AVERAGE PLATE CHARACTERISTICS



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